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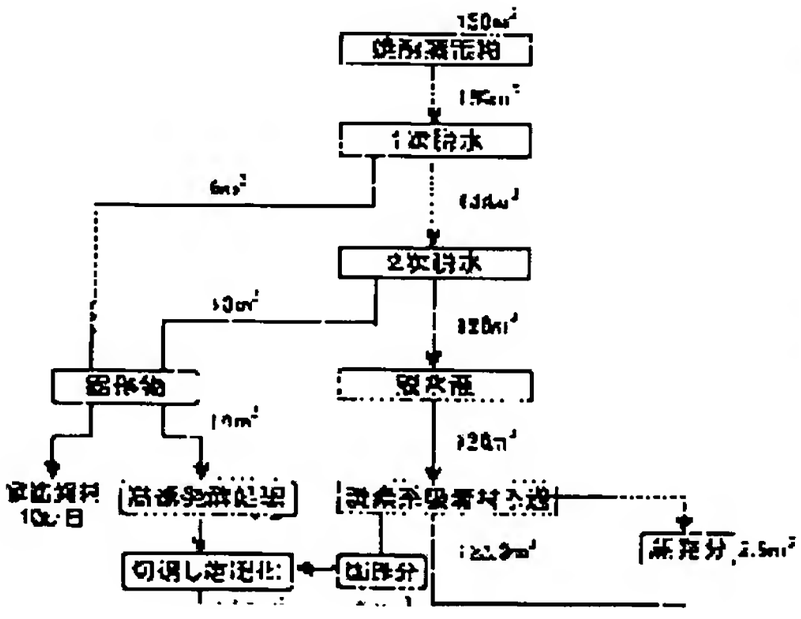
(54)【発明の名称】焼酎蒸留粕の処理方法と、焼酎蒸留粕から得られた液体肥料

(57)【要約】
【課題】悪臭の発生や、地下水汚染等環境に対する悪影響がなく、比較的簡単な施設で効率良く、焼酎蒸留粕を処理する方法を開発するとともに臭気のない液体肥料を得る。
【解決手段】焼酎蒸留粕を脱水して固液分離し、分離された固形物は家畜飼料又は醗酵処理をして土壌改良材か肥料とする。脱水液は、樹皮・木屑等の炭素系吸着材の堆積物の上に投入し、ろ過吸着させて汚染物質を吸着・分解して除去し、該炭素系吸着材でろ過吸着されて、ろ過装置から流出した液体は、液体肥料として利用する。



【特許請求の範囲】
【請求項１】
焼酎蒸留粕を固液分離し、得られた脱水液を植物木質組織の小片からなる炭素系吸着材構成された堆積物の層上に投入し、該堆積物の層でろ過・吸着して浄化することを特徴する焼酎蒸留粕の処理方法。
【請求項２】
焼酎蒸留粕を固液分離し、得られた脱水液を植物木質組織の小片からなる炭素系吸着材構成された堆積物の層上に投入し、該堆積物の層でろ過・吸着して浄化して得られた液からなることを特徴とする焼酎蒸留粕から得られた液体肥料。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】
本発明は、焼酎蒸留粕の処理方法と、焼酎蒸留粕の処理により得られた液体肥料に関す
。
【０００２】
【従来の技術】
本格乙類焼酎は近年その消費量の増加が続いているが、製品の約２倍量発生する焼酎蒸粕はＢＯＤが数万ｐｐｍと高濃度の汚染物質が含まれ、その処理が問題となっている。焼酎蒸留粕の海洋投棄が規制されている現在、農地還元や肥料化、飼料化などが検討さ一部で実施されている。
【０００３】
しかし、農地還元では、悪臭の発生や地下水の汚染が心配され、肥料化や飼料化では処経費や処理施設の建設費用がかかることが問題である。
例えば、焼酎蒸留粕を濃縮してペースト状化させ、他の飼料や肥料・米糠などと混合しペレット状や顆粒状などとして粒状化、或いは粉末化する方法が提案されている（特許献１参照。）。
【０００４】
また、焼酎蒸留粕を固液分離し、そのろ液を濃縮させて水分含有率６５％～８０％の濃液を抽出し、該濃縮液と乾草や穀類等の混合原料を所定の割合で混合させてなるウエッタイプの完全飼料の製造方法が開示されている（例えば特許文献２参照。）。
【０００５】
【特許文献１】
特開平５－１９４０６７号公報
【特許文献２】
特許２９７６０７２号公報
【０００６】
【発明が解決しようとする課題】
特許文献１に開示された方法では、９０％以上の水分を含んだ焼酎蒸留粕を濃縮して水１３％程度のペースト状にするため、濃縮に要する費用が多額となる難点がある。
また、特許文献２に示された方法では、処理施設に多くの設備投資を必要とし、中小の酒造業者にはとても実施が困難と思われる

焼酎蒸留粕は通常９０％以上の水分を含んでいるため、ロータリプレスで１次脱水し、らに遠心分離方式で２次脱水をする。１次脱水、２次脱水で固形物を除去した脱水液をる。

【００１０】

前記脱水液は、植物木質組織の小片からなる炭素系吸着材で構成された堆積物の層上に入される。ここで、植物木質組織の小片とは、樹皮の破砕物、木材チップ、樹木剪定時発生する枝、鋸屑、かんな屑等の木屑が含まれる。

【００１１】

炭素系吸着材で構成された堆積物の層とは、樹皮や木屑等を台形上に積み上げ、その上に液の投入溜を設け、該投入溜に前記脱水液を投入する。

【００１２】

炭素系吸着材で構成された堆積物の層でろ過され、汚染物質が吸着除去された脱水液は記堆積物の層の下に集まり回収タンクに流入する。

【００１３】

回収タンクに流入した液体の一部は液体肥料として出荷し、その他の液体は活性汚泥法の他好気性生物処理を行って放流する。

【００１４】

本発明の第２は、焼酎蒸留粕を固液分離し、得られた脱水液を植物木質組織の小片からる炭素系吸着材で構成された堆積物の層上に投入し、該堆積物の層でろ過・吸着して浄して得られる液体からなることを特徴とする焼酎蒸留粕から得られた液体肥料である。

【００１５】

焼酎蒸留粕の脱水液を炭素系吸着材で構成された堆積物層で浄化すると、ＢＯＤ成分の半は吸着又は分解除去されるが、なお窒素分、カリ分、リン酸分を含んでいることから炭素系吸着材で構成された堆積物からのろ液を液体肥料として利用しようとするものである。

【００１６】

【発明の実施の形態】

本発明の実施の形態を図１に示すような工程順で説明する。ただし、本発明は必ずしものような方法に限られるものではなく、特許請求の範囲に特定された特徴を含むあらゆ処理方法に適用することができる。

【００１７】

図１において、まず焼酎蒸留粕を焼酎製造元から収集運搬する。このときの焼酎蒸留粕主として本格乙類焼酎の蒸留粕であり、原料は米、麦、甘しょ、その他の穀類などが含れる。

【００１８】

１次脱水は、ロータリープレスで原液の中から固形分（主として粗粒子分）を除去する凝集剤は使用しない。飼料又は肥料として利用する場合、障害を生ずるおそれがあるかである。

【００１９】

１次脱水の後、さらに遠心分離方式で２次脱水をし、微細固形物を除去し、脱水液を得

炭素系ろ過材で吸着ろ過され、流下した液体はコンクリート製受器に集められ、一部は体肥料として利用され、残りの部分は水処理施設でさらに浄化されて公共水域に放流される。ここで、臭気のない液体肥料が短時間で得られる。

【００２３】

次に木質繊維組織の小片からなる炭素系吸着材で構成された堆積物の層を妥部とするろ装置を図２及び図３に基づいて説明する。

炭素系吸着材２は、樹皮の破砕物、剪定後の木屑、木材チップ、鋸屑、かんな屑等木質維組織からなる小片を台形状に堆積して構成されている。台形状の堆積物の上面に凹み設け投入溜３とし、該投入溜３に脱水液を投入する。なお、投入溜３には臭気の拡散防のため、蓋４を設けることが好ましい。

【００２４】

炭素系吸着材２の下にコンクリート製受容器５があり、炭素系吸着材２を通過した液体前記コンクリート製受容器５に集められる。

コンクリート受容器５に集められた液体は、回収敷板６を経由して回収タンク７に集められる。

【００２５】

【実施例】

１５０m^3／日の焼酎蒸留粕を処理した実施例について説明する。炭素系吸着材２を用たろ過装置は図２，図３に示すとおりである。

炭素系吸着材の堆積物は底面が縦３０ｍ×横１５ｍ，上面が縦２５ｍ×横９ｍ，高さ３の台形になっていて、上面に縦２１ｍ，横７ｍ，深さ１ｍの投入溜３が設けられている樹皮（バーク類）からなる炭素系吸着材の容積はおよそ７８０m^3であった。

【００２６】

表１に焼酎蒸留粕の処理を行ったときの固形物，脱水液の発生量，水質等の変化をまとて記載した。

【００２７】

【表１】

試料名	発生量	m³/日		水質			肥料成分		
				PH	BOD	SS	T－N	P_2O_5	K_2O
1．焼酎蒸留粕抽		150	芋	4.1	83000	55000	0.24	0.03	0.18
			麦	3.6	40000	34000	0.39	0.064	0.04
2．1次脱水	固形物	6							
	脱水液量	144							
3．2次脱水	固形物	18							
	脱水液量	126	芋	4.1	28000	1900	0.084	0.087	0.287
			麦	3.9	38000	220	0.246	0.064	0.049
4．炭素系吸着材ろ過	固形物	0.2							
	脱水液量	125.8		6.7	84	470	0.01	0.01	0.05
5．水処理施設	処理量	30		7.3	20	30			
6．液体肥料	製造量	93.3		6			0.01	0.01	0.05
7．バーク堆肥	製造量	2.8					0.555	0.778	0.24

注）ＢＯＤ，ＳＳはｍｇ／リットル、肥料成分は％です。

【００２８】

図１のフローシートにおいて焼酎蒸留粕を１５０ｍ^3／日処理し、１次脱水で固形物６ｍ^3／日，脱水液１４４ｍ^3／日に固液分離し、２次脱水で固形物１８ｍ^3／日，脱水液２６ｍ^3／日に固液分離する。

２次脱水液１２６ｍ^3／日を炭素系吸着材によるろ過で固形物０．２ｍ^3／日，脱水液２５．８ｍ^3／日を得る。炭素系吸着材から流出する脱水液１２５．８ｍ^3／日のうち０ｍ^3／日は水処理施設で処理し、２．５ｍ^3／日は蒸発で失われるとすると、１２５．８－３０－２．５＝９３．３ｍ^3／日が液体肥料として利用される。

ＢＯＤ等の水質は表１に示すとおりである。

【００２９】

表２に脱水した固形物とその含有水分を示す。固形物２４ｔのうち１０ｔ／日を家畜飼とし、残りはバーク堆肥生産のために用いることとする。

【００３０】

【表２】

脱水固形物

【００３１】
表３は、炭素系吸着材による処理における水分蒸発量を示した。
表３において、焼酎蒸留粕１４．２ｔとあるのは、１次脱水と２次脱水で発生した脱水形物２４ｔから飼料製造に用いた１０ｔを差引き、炭素系吸着材に吸着した０．２ｔをえたものである。
２４ｔ－１０ｔ＋０．２ｔ＝１４．２ｔ
水分蒸発量は、炭素系吸着材の堆積物等が乾物として５０９．７m^3あるとして、５ｋ／m^3・日の蒸発量として計算した。
５ｋｇ／m^3・日×５０９．７＝２５４８ｋｇ／日
【００３２】
【表３】
炭素系ろ過吸着時水分蒸発量条件

種類	含水	量	乾物	水分
バーク類	３５％	７８０	５０７	２７３
焼酎蒸留粕	８１％	１４．２	２．７	１１．５
脱水液	１００％	１２５．８		１２５．８
合計	４５％	９２０	５０９．７	４１０．３

【００３３】
液体肥料の製造量は、炭素系吸着材からの脱水液１２５．８m^3／日から水処理施設分０m^3／日と蒸発分２．５m^3／日を差引いた残りの９３．３m^3／日である。
１２５．８－３０－２．５＝９３．３m^3／日
【００３４】
表４にバーク堆肥製造量を示した。バークは乾物として５０７ｔの堆積があり、３年間（１０９５日）で全部が入れかわるものとすると１日当りの使用量は、
５０７０００ｋｇ÷１０９５＝４６３ｋｇとなる。
堆肥化の段階で焼酎蒸留粕の脱水固形物は７０％分解し、バークは３０％分解するものすると水分５０％とみるとバーク堆肥製造量は２２６８ｋｇ／日（水分５０％）となる
【００３５】
【表４】
バーク堆肥製造量

種類	投入量	分解率	減少量	製造量
焼酎蒸留粕	２７００	７０％	１８９０	８１０
バーク	４６３	３０％	１３９	３２４

パーク（樹皮）以外の木屑等を使用する場合も同様の作業を行うものとする。

【００３７】

【発明の効果】

焼酎蒸留粕の脱水処理で得られた固形物は、家畜飼料又は土壌改良材若しくは肥料として利用でき、脱水液は炭素系吸着材で吸着ろ過することで効率的に汚染物質を吸着・分解して除去し、悪臭の発生や地下水汚染等環境に対する悪影響は未然に防止できる。炭素系吸着材としては、樹皮や剪定枝、木屑等ほとんどが従来廃棄物として処分されていたもの活用できるのでこれらの処分費用を簡減できるとともに、吸着処理した後、さらに堆肥して利用可能となる。

また、従来の焼酎蒸留粕処理施設と比較して簡単な設備で効率良く処理できることから処理施設の建設経費や処理施設の運転経費もはるかに経済的である。

【図面の簡単な説明】

【図１】本発明に係る焼酎蒸留粕処理のフローシートである。

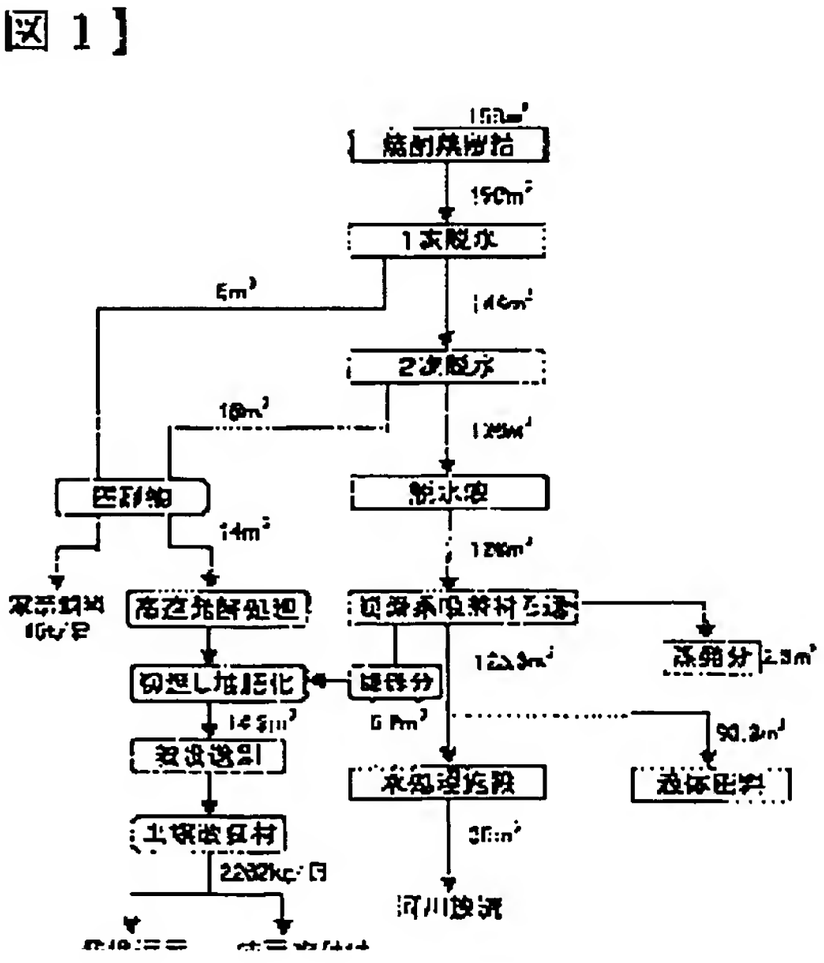
【図２】炭素系吸着材によるろ過装置の側断面図である。

【図３】炭素系吸着材によるろ過装置の平面図である。

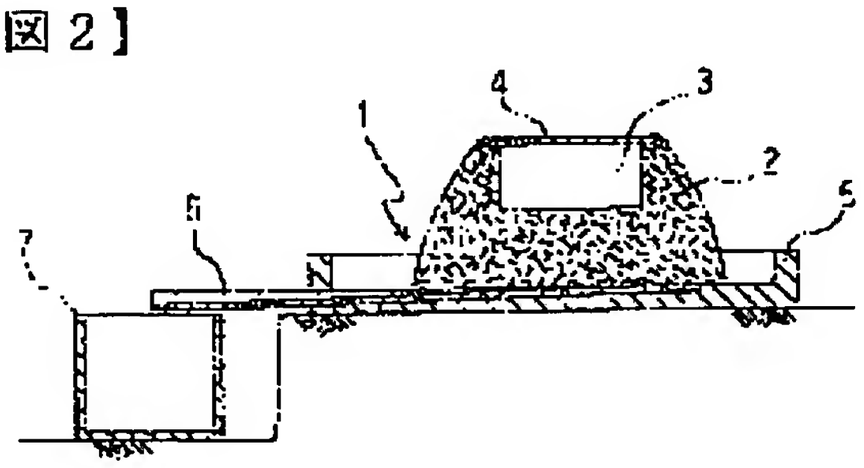
【符号の説明】

1　ろ過装置
2　炭素系吸着材
3　投入溜
4　蓋
5　コンクリート製受容器
6　回収敷板
7　回収タンク

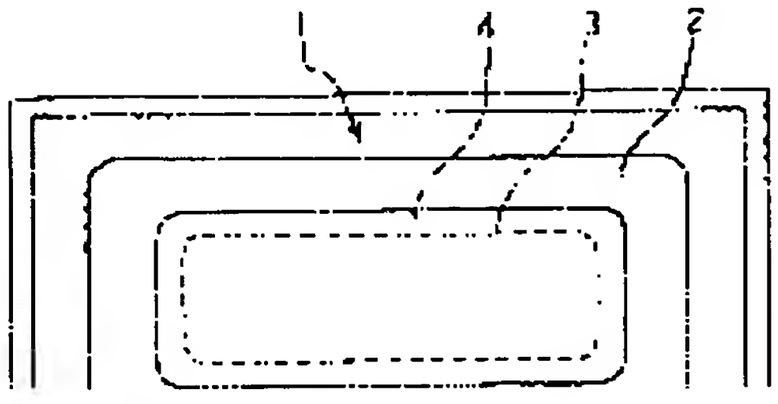
【図１】



【図２】



【図３】



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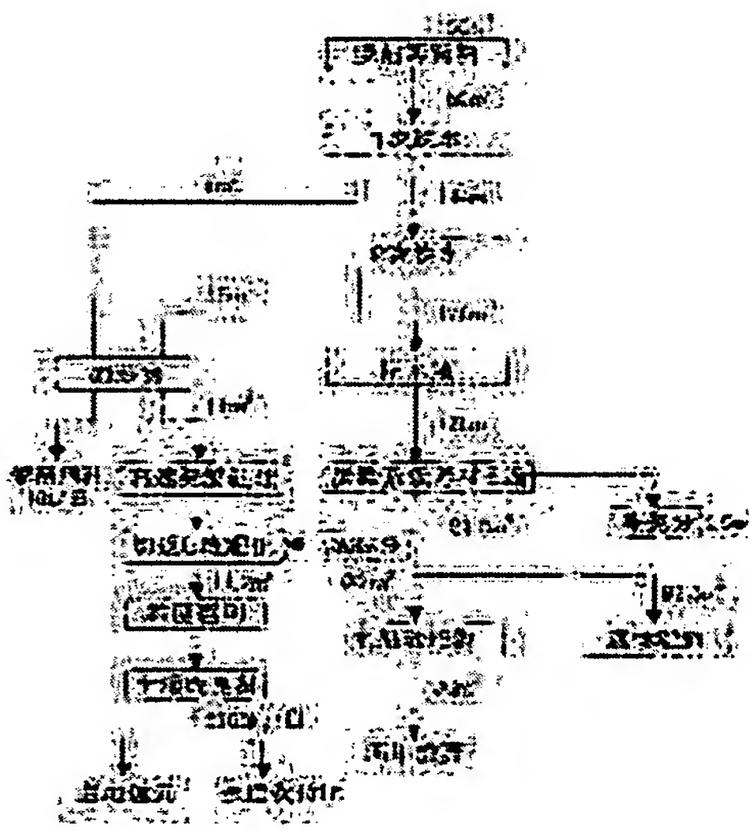
(54) SHOCHU DISTILLATION RESIDUE TREATMENT METHOD AND LIQUID MANURE OBTAINED FROM THE RESIDUE

(57)Abstract:

PROBLEM TO BE SOLVED: To develop a method for treating a Shochu distillation residue efficiently by relatively simple facilities without a bad influence on the environment, such as offensive odor generation and groundwater pollution; to obtain odorless liquid manure.

SOLUTION: The Shochu distillation residue is subjected to solid-liquid separation by dehydration. The separated solid is used as animal fodder, or as a soil improvement material or manure after fermentation treatment. The water produced by the dehydration is fed onto a heaped material comprising a carbon-based adsorbent, such as bark and wood waste, to be filtered and adsorbed. Thereby pollutants are removed by adsorption/decomposition. The liquid flowing out of a filter after the filtration and adsorption by the carbon-based adsorbent is used as the liquid manure.



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CLAIMS

[Claim(s)]
[Claim 1]
The art of the distilled spirits lees characterized by carrying out solid liquid separation of the distilled spirits lees, throwing in the obtained dehydration liquid on the layer of the deposit which consisted of carbon system adsorptio material which consists of a wafer of vegetable woody structure, filtering and adsorbing and purifying in the layer this deposit.
[Claim 2]
Liquid fertilizer obtained from the distilled spirits lees characterized by consisting of a liquid which carried out sol liquid separation of the distilled spirits lees, threw in the obtained dehydration liquid on the layer of the deposit which consisted of carbon system adsorption material which consists of a wafer of vegetable woody structure, filtered and adsorbed, purified and was obtained in the layer of this deposit.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]
This invention relates to the liquid fertilizer obtained by the art of distilled spirits lees, and processing of distilled spirits lees.
[0002]
[Description of the Prior Art]
Although, as for authentic type B shochu, the increment in the consumption continues in recent years, the pollutant tens of thousands of ppm and high concentration is contained, and the processing poses a problem. [distilled spirit: lees / of a product / which carry out amount generating about 2 times] [BOD]
Current and farmland reduction by which ocean dumping of distilled spirits lees is regulated, fertilizer-izing, feed-izing, etc. are considered, and it carries out partly.
[0003]
However, in farmland reduction, it is a problem that worry about generating of an offensive odor or contamination an underground water, and the construction costs of processing expense or a treatment facility start in fertilizer-izir or feed-ization.
For example, distilled spirits lees are made the shape of a paste-izing [condense and], it mixes with other feed, fertilizer, rice bran, etc., and granulation or the approach of carrying out disintegration is proposed as a pellet type, granularity, etc. (patent reference 1 reference.).
[0004]
Moreover, solid liquid separation of the distilled spirits lees is carried out, the filtrate is made to condense, concentration liquid of 65% - 80% of moisture content is extracted, and the manufacture approach of wet type complete feed of making it coming to mix mixed raw materials, such as hay and cereals, with this concentration liquid at a predetermined rate is indicated (for example, patent reference 2 reference.).
[0005]
[Patent reference 1]
JP,5-194067,A
[Patent reference 2]
JP,2976072,B
[0006]
[Problem(s) to be Solved by the Invention]
By the approach indicated by the patent reference 1, in order to condense the distilled spirits lees containing 90% o more of moisture and to make it the shape of a paste of about 13% of moisture, there is a difficulty that the costs which concentration takes serve as a large sum.
Moreover, by the approach shown in the patent reference 2, many plant-and-equipment investment is needed for a treatment facility, and it is thought in a minor white-distilled-liquor manufacturer that operation is very difficult.
[0007]
This invention solves the aforementioned technical problem, processes distilled spirits lees efficiently using the comparatively easy facility which a minor white-distilled-liquor manufacturer can also adopt, and aims at offering

liquid fertilizer simultaneously.
[0008]
[Means for Solving the Problem]
The 1st is the art of the distilled spirits lees characterized by carrying out solid liquid separation of the distilled spi lees of this invention, throwing in the obtained dehydration liquid on the layer of the deposit which consisted of carbon system adsorption material which consists of a wafer of vegetable woody structure, filtering and adsorbing and purifying in the layer of this deposit.
[0009]
Since distilled spirits lees usually contain 90% or more of moisture, primary boiling of them is carried out with a rotary press, and they carry out secondary dehydration by the centrifugal separation method further. The dehydrati liquid from which the solid was removed by primary boiling and secondary dehydration is obtained.
[0010]
Said dehydration liquid is thrown in on the layer of the deposit which consisted of carbon system adsorption mater which consists of a wafer of vegetable woody structure. the branch generated with the wafer of vegetable woody structure here at the time of the debris of a bark, a timber chip, and tree pruning, saw dust, and canna -- saw dust, such as waste, is contained.
[0011]
With the layer of the deposit which consisted of carbon system adsorption material, a bark, saw dust, etc. are accumulated on a trapezoid, ****** of liquid is prepared in the top face, and said dehydration liquid is thrown into this ******.
[0012]
Filtered in the layer of the deposit which consisted of carbon system adsorption material, the dehydration liquid wi which adsorption treatment of the pollutant was carried out gathers in the bottom of the layer of said deposit, and flows into a recovery tank.
[0013]
Some liquids which flowed into the recovery tank are shipped as liquid fertilizer, and other liquids discharge by performing other activated sludge process and aerobic organism processing.
[0014]
The 2nd is liquid fertilizer obtained from the distilled spirits lees characterized by consisting of a liquid which carr out solid liquid separation of the distilled spirits lees of this invention, throws in the obtained dehydration liquid on the layer of the deposit which consisted of carbon system adsorption material which consists of a wafer of vegetabl woody structure, filters and adsorbs, purifies and is obtained in the layer of this deposit.
[0015]
If the dehydration liquid of distilled spirits lees is purified in the deposit layer which consisted of carbon system adsorption material, most BOD components will be adsorbed or decomposition removed, but since a part for a part for nitrogen content and potash and a phosphoric acid is included in addition, it is going to use the filtrate from the deposit which consisted of carbon system adsorption material as liquid fertilizer.
[0016]
[Embodiment of the Invention]
It explains in order of a process as shows the gestalt of operation of this invention to drawing 1 . However, this invention is not necessarily restricted to such an approach, and can be applied to all arts including the description specified as the claim.
[0017]
In drawing 1 , collection haulage of the distilled spirits lees is first carried out from the white-distilled-liquor manufacturer. The distilled spirits lees at this time are mainly pot ale of authentic type B shochu, and, as for a raw material, the cereals of rice, wheat, a sweet potato, and others etc. are contained.
[0018]
Primary boiling removes solid content (a part for coarse grain [Mainly]) out of an undiluted solution with a rotary press. A flocculant is not used. It is because there is a possibility of producing a failure when using as feed or a fertilizer.
[0019]

After primary boiling, secondary dehydration is further carried out by the centrifugal separation method, a detailed solid is removed, and dehydration liquid is obtained.
[0020]
After considering as livestock feed or carrying out high-speed fermentation processing, cut back and compost, perform grain-size sorting etc. and it returns to farmland as soil amelioration material, and also the solid separated primary boiling and secondary dehydration is used for work of slope spraying etc.
[0021]
The dehydration liquid obtained by secondary dehydration is fed into the filter which uses as an important section t layer of the deposit which consisted of carbon system adsorption material which consists of a wafer of woody fibe tissue, such as a bark of a Japan cedar and others, saw dust after pruning, and a timber chip, and a BOD componen etc. is decomposed or removed by filtration and adsorption.
[0022]
Adsorption filtration is carried out with a carbon system filter medium, and the liquid which flowed down is broug together in the receiver made from concrete, a part is used as liquid fertilizer, and the remaining part is purified further in a water treatment facility, and is discharged to a public water area. Here, liquid fertilizer without an odor obtained for a short time.
[0023]
Next, the filter which uses as an important section the layer of the deposit which consisted of carbon system adsorption material which consists of a wafer of woody fiber tissue is explained based on drawing 2 and drawing 3 the carbon system adsorption material 2 -- the debris of a bark, the saw dust after pruning, a timber chip, saw dust, and canna -- the wafer which consists of woody fiber tissue, such as waste, is deposited on trapezoidal shape, and i constituted. A depression is established in the top face of the deposit of trapezoidal shape, it considers as ****** 3. and dehydration liquid is thrown into this ****** 3. In addition, to ****** 3, it is desirable to form a lid 4 because diffusion prevention of an odor.
[0024]
The receptor 5 made from concrete is under the carbon system adsorption material 2, and the liquid which passed t carbon system adsorption material 2 is brought together in said receptor 5 made from concrete.
The liquid brought together in the concrete receptor 5 is brought together in the recovery tank 7 via the recovery cover plate 6.
[0025]
[Example]
The example which processed the distilled spirits lees of a 150m3/day is explained. The filter using the carbon system adsorption material 2 is as being shown in drawing 2 and drawing 3 .
It has a base to 30m by 15m, the top face has a trapezoid with 9m [25m by], and a height of 3m, and, as for the deposit of carbon system adsorption material, ****** 3 with 21m long, 7 widem, and a depth of 1m is formed in th top face.
The volume of carbon system adsorption material which consists of a bark (bark) was 3 about 780m.
[0026]
Change of the solid when processing distilled spirits lees, the yield of dehydration liquid, water quality, etc. was collectively indicated to a table 1.
[0027]
[A table 1]

試料名	発生量	m^3/日		水質			肥料成分		
				PH	BOD	SS	T－N	P_2O5	K_2O
1．焼酎蒸留酎粕		150	芋	4.1	33000	35000	0.24	0.03	0.18
			麦	3.6	40000	34000	0.39	0.064	0.04
2．1次脱水	固形物	6							
	脱水液量	144							
3．2次脱水	固形物	18							
	脱水液量	126	芋	4.1	28000	1900	0.084	0.067	0.237
			麦	3.9	38000	220	0.246	0.064	0.049
4．炭素系吸着材ろ過	固形物	0.2							
	脱水液量	125.8		6.7	84	470	0.01	0.01	0.05
5．水処理施設	処理量	30		7.3	20	30			
6．液体肥料	製造量	93.3		6			0.01	0.01	0.05
7．バーク堆肥	製造量	2.3					0.555	0.778	0.24

mg/a liter, and the fertilizer component of Notes BOD and SS are %s.

[0028]

In the flow plan of drawing 1 , 150m3/day processing of the distilled spirits lees is carried out, solid liquid separati is carried out by primary boiling on the 6m3/day of solids, and the 144m3/day of dehydration liquid, and solid liqu separation is carried out by secondary dehydration on the 18m3/day of solids, and the 126m3/day of dehydration liquid.

The 0.2m3/day of solids and the 125.8m3/day of dehydration liquid are obtained by filtration according the 126m3/day of secondary dehydration liquid to carbon system adsorption material. A 30m3/day is processed in a water treatment facility among the 125.8m3/days of dehydration liquid which flow out of carbon system adsorptio material, and supposing a 2.5m3/day is lost in evaporation, a 125.8-30-2.5= 93.3m3/day will be used as liquid fertilizer.

Water quality, such as BOD, is as being shown in a table 1.

[0029]

The solid dehydrated to a table 2 and its content moisture are shown. Using a day as livestock feed in 10t /of 24t of solids, the remainder decides to use for bark compost production.

[0030]

[A table 2]

Dehydration solid

	含水率	量	乾物	水分
１次脱水	６９％	６ｔ	１．８６	４．１４
２次	８５％	１８ｔ	２．７	１５．３
合計	８１％	２４ｔ	４．５６	１９．４４

[0031]
A table 3 showed the moisture evaporation in processing by carbon system adsorption material.
In a table 3, that it is with 14.2t of distilled spirits lees deducts 10t used for feed manufacture from 24t of dehydrati solids generated in primary boiling and secondary dehydration, and it adds 0.2t which stuck to carbon system adsorption material.
24t-10t+0.2t=14.2t
Moisture evaporation was calculated as evaporation of 5 kg/m3 and a day noting that there was a deposit of carbon system adsorption material etc. 509.7m3 as a dried food.
5 kg/m3 and day x509.7=2548kg/day
[0032]
[A table 3]
They are moisture evaporation conditions at the time of carbon system filtration adsorption.

種類	含水	量	乾物	水分
バーク類	３５％	７８０	５０７	２７３
焼酎蒸留粕	８１％	１４．２	２．７	１１．５
脱水液	１００％	１２５．８		１２５．８
合計	４５％	９２０	５０９．７	４１０．３

[0033]
The amounts of manufactures of liquid fertilizer are the remaining 93.3m3/days which deducted the water treatmer facility 30mper part3/day, and the evaporation 2.5mper part3/day from the 125.8m3/day of dehydration liquid fron carbon system adsorption material.
125.8-30-2.5= 93.3m3/day
[0034]
The amount of bark compost manufactures was shown in a table 4. Bark is the amount of per [used] day, if there shall be 507t deposition as a dried food and all shall put in and change in three years (1095 days),
It is set to 507000kg/1095=463kg.
The dehydration solid of distilled spirits lees is disassembled 70% in the phase of composting, and if it shall decompose 30% and bark will regard it as 50% of moisture, the amount of bark compost manufactures will becom day in 2268kg (50% of moisture) /.
[0035]
[A table 4]

The amount of bark compost manufactures

種類	投入量	分解率	減少量	製造量
焼酎蒸留粕	２７００	７０％	１８９０	８１０
バーク	４６３	３０％	１３９	３２４
水分				１１３４
合計				２２６８

[0036]
When using bark (bark) as carbon system adsorption material, bark (bark) will be left out in the fields for two to th years, natural deposition is carried out and it is desirable to grind the bark (bark) which carried out natural deposit and to use it for filtration and adsorption of shochu lees. The bark (bark) used for filtration adsorption of distilled spirits lees will exchange all for new bark (bark) in about three years.
The same activity shall be done also when using saw dust other than bark (bark) etc.
[0037]
[Effect of the Invention]
The solid obtained by dehydration processing of distilled spirits lees can be used as livestock feed, soil ameliorati material, or a fertilizer, by carrying out adsorption filtration by carbon system adsorption material, dehydration liq is adsorbed and disassembled, and removes a pollutant efficiently, and the adverse effect to environments, such as generating, groundwater contamination, etc. of an offensive odor, can be prevented beforehand. Since most, such a bark, and a pruning branch, saw dust, can utilize what was conventionally disposed of as trash as carbon system adsorption material, while being able to **** these costs of disposal, after carrying out adsorption treatment, it becomes still more nearly available as a compost.
Moreover, since it can process efficiently with an easy facility as compared with the conventional distilled-spirits-lees treatment facility, the construction expense of a treatment facility and the operation expense of a treatment facility are also far economical.
[Brief Description of the Drawings]
[Drawing 1] It is the flow plan of the distilled-spirits-lees processing concerning this invention.
[Drawing 2] It is the sectional side elevation of the filter by carbon system adsorption material.
[Drawing 3] It is the top view of the filter by carbon system adsorption material.
[Description of Notations]
1 Filter
2 Carbon System Adsorption Material
3 ******
4 Lid
5 Receptor made from Concrete
6 Recovery Cover Plate
7 Recovery Tank

[Translation done.]